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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590

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EXAMINER

LISTVOYB, GREGORY

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,913	Applicant(s) DANIEL ET AL.	
	Examiner GREGORY LISTVOYB	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 rejected under 35 U.S.C. 103(a) as being unpatentable over Torii et al (US 2003/0069359) herein Torii in combination with Freedman et al (US 4478938) herein Freedman (necessitated by Amendment) .

Torii discloses a water absorbent comprising

(a) particles of a water absorbent polymer, and

(b) a nitrogenous polymer containing from 5 to 17 mol/kg, based on the total weight of the nitrogenous polymer, of protonatable nitrogen atoms (Commercial name CationfasrtPR8106 with protonable nitrogen content of 6.1 mol/kg (see Example 10 and Abstract). Most favorably, protonable nitrogen content is more than 6mol/kg (line 0159)

Regarding claims 2 and the nitrogenous polymer is a hydrolysis product of a homo- or copolymer of an N-vinylcarboxamide and/or N-vinylcarboximide (Catiofast PR (see Example 10 and Tables 2 and 3) used in the Application (see page 4, line 35 of the Application)).

Regarding Claims 3 Torii discloses a water absorbent (see discussion above) characterized a particle size distribution where more than 97% by weight of the particles are from 150 to 850 um in size,

a Saline Flow Conductivity (SFC) of at least 30×10^{-7} cm³/g (see Table 3),

a Ball Burst Strength (BBS) (30 min) of at least 50 gf (125 gf in Example 10, see Table 3),

a Ball Burst Strength (BBS 16hr) (16 h) of at least 80 gf (125 gf in Example 10, see Table 3),

and a quotient [BBS (30 min) - BBS (16 h)]/BBS (30 min) of less than 0.8 (equal to Zero, see Example 10 and Table 3).

In Examiner position, the Torii's polymer with 3% of particles with size less than 149 um is functionally identical to a polymer of the Application, where 2% of particles with size less than 100um.

Regarding claims Claims 4 and 5, Torii and Application disclose the nitrogenous polymer of the identical structure. In addition, Torii discloses that most favorable MW is at least 10000 Daltons (line 00157).

In reference to Claim 6, Torii teaches water absorbent comprising from 0.01 to 10%wt of the nitrogenous polymer, based on weight of water absorbent polymer (see Claim 1).

In reference to Claims 8 and 9, Torii discloses a water absorbent polymer comprising 0-50% wt monoethylenically unsaturated acrylic acid and 50-100% wt of it

salt (see line 0115) and 0.005 to 5% of crosslinking agent (see line 0126), which can be added after polymerization (see line 0127).

Regarding Claims 10-11, the water absorbent further comprises a cellulose powder, which is applied onto the composition, which includes nitrogenous polymer (see line 0168).

In reference to Claim 12, Torii discloses a process comprising applying nitrogenous polymer onto a particles of water absorbent and if necessary drying the water absorbent (see line 0171).

Torii does not specifically teach weight average molecular weight of 100000 to 500000.

Freedman teaches polyalkyleneimine-based gel, employed as water adsorbent (see Column 4, line 50) with molecular weight within the range of 10000 to 1000000. Freedman teaches that if molecular weight of the polymer is not sufficiently high, no gelation occurs (see Column 2, line 20). In addition, low molecular weight fraction of hydrophilic polymer, such as polyalkyleneimine can be water soluble, making them unapplicable as a water adsorbent.

Therefore, it would have been obvious to a person of ordinary skills in the art to use polyalkyleneimine in Torii's applications since it creates gel more easily and not soluble in water.

Regarding new limitation claiming that amount of protonable nitrogen atoms 7.5 to 15 mol/kg, Torii discloses a broad range of cationic densities (As mentioned above, most favorably, protonable nitrogen content is more than 6mol/kg (line 0159)). Torii teaches much higher density of 11 mol/kg (see Example 4). The position is taken that protonable nitrogen content can be adjusted by an artisan for specific applications. Low cationic density produces low adsorbing capacity material, while very high amount of ,protonable nitrogen content leads to difficulties with material handling due to high intermolecular interactions.

Claim 7 rejected under 35U.S.C. 103(a) as being unpatentable over Torii in combination with Nagasuna et al (US 2004/0019342) herein Nagasuna.

Torii discloses a water absorbent comprising

- (a) particles of a water absorbent polymer, and
- (b) a nitrogenous polymer (see discussion above).

Torii teaches finely divided silica, cellulose or borate particles (see line 0168), but does not specifically disclose a water absorbent, comprising finely divided insoluble inorganic salt.

Nagasuna discloses a water absorbent, comprising finely divided insoluble inorganic salt (see line 0157), which enhance the absorbent performance, such as in applications, where charged particles required.

Therefore, it would have been obvious to a person of ordinary skills in the art at the time the invention was made to add finely divided insoluble inorganic salt particles in Torii composition to enhance performance of the composition in specific applications, where charged particles are required.

Response to Arguments

Applicant's arguments filed on 12/19/2007 have been fully considered but they are not persuasive.

All the Applicant's arguments drawn to the new limitation, regarding molecular weight and protonable nitrogen content in the polymer.

As discussed above, the newly added reference of Freedman discloses polyethyleneimine adsorbent with high molecular weight. Regarding cationic density, Torii discloses a material with amount of protonable Nitrogen within the claimed range.

The Examiner agrees with the Applicant that in view of the Amendments above, Torii fails to anticipate amended Claim 1. Therefore, Rejection under 35U.S.C. 102 (b) is replaced by Rejection under 35U.S.C. 103(a) as necessitated by amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

GL
